

# **NORTHERN CALIFORNIA EDUCATION AND RESEARCH CENTER FOR OCCUPATIONAL SAFETY AND HEALTH**

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## **ANNUAL REPORT July 1, 2009 – June 30, 2010**

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**Northern California Education and Research Center Annual Report****July 1, 2009 – June 30, 2010****Center-Wide Highlights** *Director John Balmes, MD*

The Northern California Education and Research Center of the Center for Occupational and Environmental Health (COEH) trains students for leadership positions in occupational and environmental health, while engaging in cutting-edge research in areas of interest to workers and employers. Fifty trainees in medicine, nursing, industrial hygiene, and ergonomics were part of the training program, in addition to two TRT trainees from other disciplines. Of those, 43 were partially or fully supported by NIOSH. An additional 10 students took occupational health and safety courses. Primary and affiliated teaching faculty published 132 manuscripts. Nineteen former or current students were co-authors on these manuscripts.

A symposium addressing the health and safety issues of immigrant workers, "Immigrant Workers II: Voices from the Workplace," took place in January 2010. One hundred twenty-five participants took part in this program which featured stories from immigrant workers in several sessions. Workers from the janitorial, roofing, taxi, restaurant, and home care industries were included, along with academic respondents, and government officials. The Consul General of Mexico provided introductory comments, and founding director Robert Spear and current director John Balmes presented closing remarks. Marc Schenker (UC Davis) and Robin Baker (Labor Occupational Health Program) served as co-chairs of this event.

COEH granted the Llewellyn Student Award to graduate students in environmental health sciences (EHS) at Berkeley, and civil and environmental engineering at UC Davis for a project evaluating second-hand smoke exposure in hospitality venues two-years after a smoking restriction implementation in Beijing, China.

The Advisory Committee is systematically evaluating each ERC program based on the NIOSH review and in consultation with program administrators. They completed a follow-up review of the Industrial Hygiene (IH) program, and will next review the Continuing Education and Targeted Research Training programs. Three professionals (IH, occupational health nursing, ergonomics), have accepted invitations to join the committee.

**Occupational and Environmental Medicine (OEM) Program** *Program Directors: Gina Solomon, MD, MPH, and Sarah Jewell, MD, MPH*

As of July 2010, Dr. Stephen Born will be co-directing the program. He served as program deputy director from 1998-2002 and remained closely involved as an advisory committee member and site preceptor.

Three residents received training in 2009-10. Two first-year trainees started in 2010, one of whom is in a combined Medical Toxicology and OEM program. A graduating fellow is joining the OEM clinic at San Francisco General Hospital (SFGH) and the clinical faculty. Another was elected to the Board of Directors of the Public Health Alumni Association of the Berkeley School of Public Health; her residency research project, a meta-analysis on formaldehyde and leukemia, will be published in the Journal of Occupational and Environmental Medicine and won a research award at the American College of OEM annual conference.

The OEM program successfully competed for Health Resources and Services Administration (HRSA) funding which supports Preventive Medicine residency programs in improving care to the underserved. This funding will support program expansion by adding up to two HRSA residents for three years. It will also allow increased outreach and partnerships with community clinics, research opportunities in new sectors, and trainee involvement in model workplace wellness programs.

In July 2010, the OEM program will launch a required rotation at the Veterans Administration Medical Center (VAMC). This site provides fellows a unique variety of experiences including: compensation and pension; rehabilitation medicine; and post-traumatic stress disorder, Agent Orange and Gulf War Syndrome evaluations. Dr. Sandeep Guntur (2009 OEM graduate) has been appointed as a UCSF clinical faculty member at the VAMC and will be the site preceptor for the rotation (along with a recent OEHN graduate).

Dr. Solomon conducts outreach by lecturing to residents in the UCSF Family and Community Medicine and primary care Internal Medicine (IM) programs, the SFGH IM in-patient service, and Kaiser IM residency program. She was also one of three scientists to provide testimony to the US Congress Sub-committee on Energy and Environment on the health effects of the Gulf oil spill. Dr. Solomon will be co-teaching, with Dr. Burgel of the OEHN program, an interdisciplinary course focusing on health effects of the Gulf oil spill. Dr. Solomon and Dr. Sarah Janssen (2005 OEM graduate) co-authored a commentary published in the Journal of the American Medical Association (JAMA) on this topic that generated more than 350 print, radio and television reports mentioning the OEM program. Several visiting residents, from Vanderbilt, SF Kaiser, UCSF, and New York Medical College, have elected rotations with the OEM program.

**Industrial Hygiene (IH) Program** *Program Director: Mark Nicas, PhD, MPH, CIH*

The three core IH faculty members—Dr. Nicas, Dr. S. Katharine Hammond, and Dr. Stephen Rappaport—continue to conduct IH-related research and serve as graduate student advisors. Dr. Nicas was appointed the new Editor-in-Chief of the Journal of Occupational and Environmental Hygiene, a joint publication of the American Industrial Hygiene Association and the American Conference of Governmental Industrial Hygienists. Dr. Rappaport received the 2010 Jerome J. Wesolowski award from the International Society of Exposure Science (ISES) for recognition of “sustained and outstanding contributions to the knowledge and practice of human exposure assessment.” There were 10 IH students enrolled during 2009-2010 (seven MPH and three PhD students). Of these 10, eight were supported by NIOSH traineeships. Nine students will continue their studies in 2010, all of whom will receive NIOSH support.

The IH program introduced a two-day short course on industrial ventilation. It was presented by Hank McDermott, CIH, PE, a nationally recognized ventilation engineering expert and a recently appointed member of the California Occupational Safety and Health Standards Board. This ventilation course will be taught annually during the Fall/Spring inter-session. In addition, the Exposure Assessment and Control II course was revised to include six laboratory-type sessions that required hands-on work with monitoring equipment for airborne chemical and physical agents. This course is taught biennially during the Spring semester.

**Occupational and Environmental Nursing Program** *Program Director: Oisaeng Hong, RN, PhD*

In 2009-10, a total of 21 MS and 8 PhD students were enrolled in the program. Eleven graduated with MS degrees and two with PhDs. Two PhD program graduates (Dr. Lee in 2007 and Dr. Thomas in 2009) were hired as tenure-track faculty in OEHN programs at UCSF (Lee) and UCLA (Thomas). Students were successful in obtaining scholarships and financial support from the UCSF Regents Fellowship; UCSF Dean's Health Sciences Fellowship; Eugene Cota-Robles Fellowship; P.E.O. International Peace Scholarship, and Sigma Theta Tau Honor Society for Nursing. One PhD student was awarded a highly competitive dissertation research grant from the University of California Pacific Rim Research Program.

OEHN faculty and students gave 28 presentations, authored 14 publications, and received funding for five research projects with firefighters, operating engineers, taxi drivers, and Korean blue collar workers. The OEHN faculty made contributions to and played significant leadership roles in the field by serving on the Boards of the World Academy of Nursing Science and Korean Occupational Health Nurses Association (Hong), the National Academy of Sciences/Institute of Medicine Expert Advisory Committee on the Certification of Personal Protective Technologies (Burgel), Western Occupational and Environmental Medical Association Conference Planning Committee (Burgel), AAOHN Global Summit Planning Committee and Grant Team (Burgel, Gillen, and Hong); serving on the doctoral dissertation committee for an OHN student in Thailand and hosting and providing research mentoring for one postdoctoral fellow from Korea (Hong).

**Ergonomics Graduate Training Program** *Program Director: David Rempel, MD, MPH*

In 2009-2010 one student graduated with an MPH and one with an MS degree. The MPH graduate received a job as an ergonomist with the Department of Energy's Lawrence Berkeley National Laboratory. The MS graduate received a research award from the UCLA Pilot Projects Grants for interventions among gastroenterologists. One of our recent PhD graduates (Story) is currently working as a researcher with the National Academy of Sciences in Washington, DC, and will soon join the Human Factors Team at the FDA Office of Device Evaluation. She received the International Ergonomics Association's highest award for research conducted by a graduate student.

The major programmatic addition was the delivery of a new seminar on ergonomic laboratory methods to graduate students in the ergonomics program. In addition, the Bioengineering Department began an MS program that will offer the MS pathway for engineering students interested in ergonomics graduate training.

MS and doctoral research included the effects of: computer monitor viewing distance on visual symptoms and fatigue; computer mouse weight on hand motion and productivity; dental tool design on hand symptoms among dental hygienists; in addition to wrist tendonitis in blue collar workers. Graduate students in this program and associated programs were involved in publishing 11 peer-reviewed scientific papers and presentations at 10 scientific meetings. Eight undergraduate engineering students, all minority students, continue to work in the ergonomics laboratory with the graduate students and two postdoctoral fellows.

Many R2P activities took place. National dissemination proceeded for a device to assist construction workers with overhead drilling into concrete. Statewide dissemination of workstation changes and adjustments

to garment workers and employees was coordinated with the California Department of Public Health. The laboratory also assisted US companies with the development of a new office chair design (Herman Miller); a new keyboard and computer mouse (Microsoft); and new computer monitor stands (Hewlett Packard).

In 2010, one student will complete PhD study; one PhD student will continue studies; two will begin PhD training; and one student will begin training for the MS degree in the Department of Bioengineering.

**Continuing Education (CE) and Hazardous Substances Training (HST) Programs** *Program Director: Barbara Plog, MPH, CIH, CSP*

The CE Program trained over 3,420 occupational safety and health (OSH) professionals in 106 courses, representing an increase of over 1,000 professionals and 16 new courses, during an economic downturn. Increases were seen in all categories: nursing professionals more than doubled from the previous year with 516 attendees; physicians increased by 26% to 592; IH attendees increased by 26% to 539; and the number of "other" professionals increased 17% to 1,515. The number of private industry professionals trained increased 21% to 1,167. Attendees also came from federal government (233); state and local government (614); academia (1,032); and internationally (73). New course titles included the following: *"Biotech and Laboratory Ergonomics," "Preventing Workplace Violence," "New Developments in Occupational Infectious Disease,"* as well as new nursing courses that included *"Respiratory Protection for Aerosol Transmissible Diseases,"* and *"Preparedness for Respirator Use in Healthcare Facilities."*

The HST program trained 418 professionals (for a 75% increase over the previous year) and provided scholarships to some attendees. The audience was as varied and vital as in the past. *"Hazards of Pesticides to Emergency Responders"* was co-sponsored by government and private organizations, including: FEMA; NFPA; CA Governor's Office of Emergency Services, State Fire Marshal, and Fire Chiefs Association. Attendees included state, county and municipal hazardous materials specialists and managers, EH specialists and investigators, fire chiefs, fire service hazmat personnel, safety coordinators, environmental technicians and industrial hygienists. Many county, state and municipal agencies were represented as well as hazardous materials response specialists from government agencies, police departments, Cal/EPA and the CA Department of Toxics Substance Control. For two years, occupational clinicians have been taking the on-line class, *"Recognition, Management and Reporting of Pesticide Illnesses,"* co-sponsored with the CA Department of Pesticide Regulation and Cal/EPA. The HST program is especially excited about introducing its series of Green Chemistry workshops.

**Outreach Activities: Labor Occupational Health Program** *Robin Baker, MPH and Diane Bush, MPH*

Outreach activities are conducted primarily by the Labor Occupational Health Program (LOHP) which serves as a community service and research-to-practice (R2P) arm of the ERC. Activities are funded through a rich mixture of core intramural funds and diverse extramural sources. Key activities this year include: 1) Over 100 training workshops and awareness seminars reaching more than 2000 individuals, including presentations at post secondary institutions including community colleges, UC Berkeley and UCSF, Samuel Merritt School of Nursing, and others; workshops for high school teachers, students, labor organizations, worker centers and other community organizations; workshops for small business owners and managers, including a workshop for 80 employers in Guam; 2) Integration of OSH curricula into existing training, including training for managers of sheltered workshops and other businesses that employ workers with disabilities; for school health and safety managers; and high school-based work experience and WorkAbility programs (for students with special needs); 3) Partnering with academic, labor and community-based partners on R2P projects, including ongoing work on development of an intervention tool to improve OSH of home care workers; participatory research with Chinese restaurant workers; development of a survey tool to assess health and safety working conditions of Latino restaurant workers; worker evaluation of an ergonomically improved pavement breaker, and an exploratory assessment of the recycling/waste management industry in the Bay Area. Several of these projects also offered opportunities for students to develop OSH skills, as they were part of the national Occupational Health Internship Program; 4) Developing and piloting innovative new OSH training materials for practitioners and lay educators, such as a short curriculum on green chemistry for workers; 5) Raising OSH awareness in the community, including work with the California Department of Industrial Relations on a major public information campaign on heat illness, as well as work on a social marketing campaign targeting hazard control for domestic workers; and 6) Facilitating the translation of research findings to practice for active use by workplace and community leaders, through publications and by working with faculty on research dissemination (e.g. training on green chemistry and articles for lay audiences).